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# About SBC Core

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In this section:

- What is an SBC?
  - Session
  - Border
  - Controller
- Sonus SBC Portfolio Components

## What is an SBC?

To understand the role of a Session Border Controller, let us break the term down to its basic elements:

- Session
- Border
- Controller

### Session session

A **call leg** is defined as a single connection between the SBC and another device. So a session between two devices includes a call leg between device A and the SBC, and a call leg between the SBC and device B.

A **call** may require a single session or it may require multiple sessions resulting from call forking, conference call, call transfer, call recording or other mechanisms. For example, a call between two registered users through a feature server consumes two sessions: one session from User A to the Feature Server and one session from the Feature Server to User B.

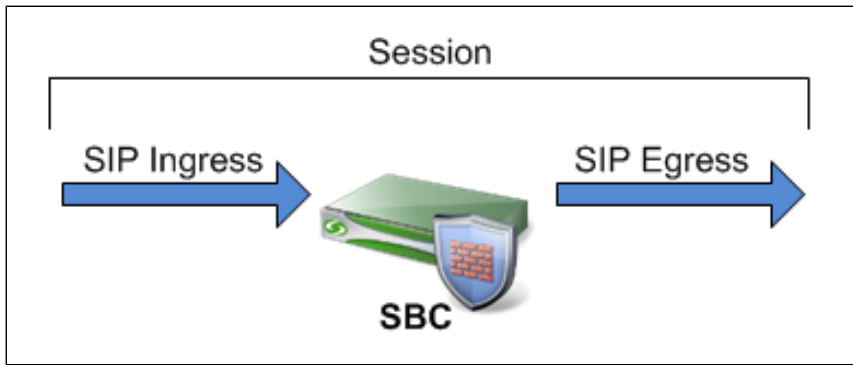
The total number of concurrent sessions supported on the SBC platform may be limited by different factors, including:

- **Available Bandwidth** – For calls with pass-through media, the SBC computes the media bandwidth required for each call leg, and determines if there is sufficient bandwidth available to host the call. Calls exceeding the bandwidth limit of the interface are rejected.
- **Call Rate** – If the incoming call rate exceeds the rated capacity of the platform, calls are discarded to protect the system from overload. The number of concurrent sessions required is directly related to the Call Rate and the Call Hold Time (CHT). High call rates with a low average CHT value will result in fewer sessions than the same call rate with a high average CHT value.
- **System Limits** – Each platform includes upper limits on the number of sessions supported. For example, the SBC 5200 supports a maximum of 64,000 sessions, while the SBC 5100 supports a maximum of 10,000 sessions.
- **License Limits** – The SBC is licensed for the maximum number of sessions desired. However, the license limit may be less than what the Bandwidth, Call Rate or System limits support. Any call that exceeds the licensed limit of the SBC platform are rejected.

### Example #1: Call with one Session

A customer has purchased a 5,000 package of licenses, calls are coming in and egressing the SBC with no call forking – so each ingress and egress is one session. The maximum number of active calls is 5,000.

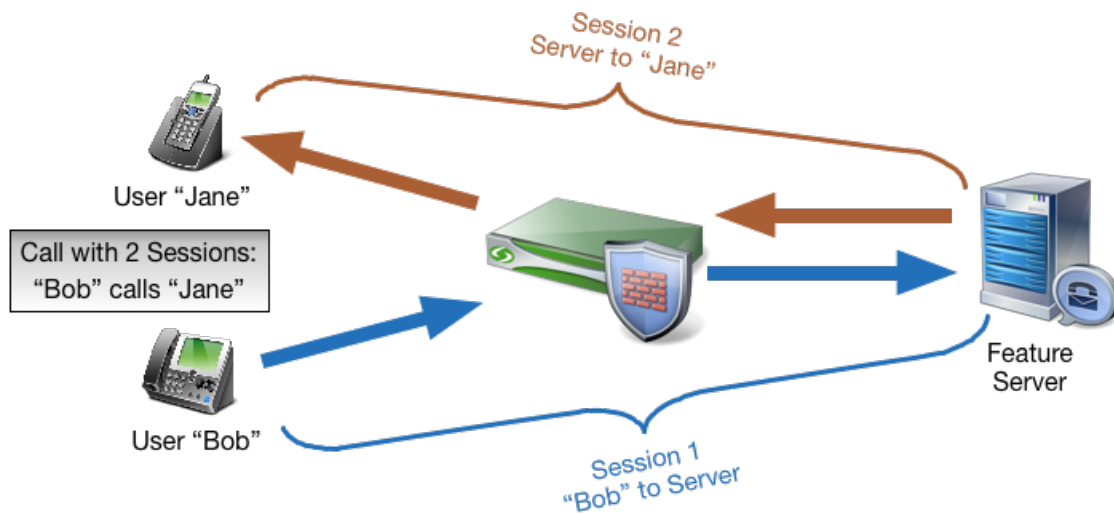
**Figure 1:** Call with one session



## Example #2: Call with two Sessions

A customer has purchased a 5,000 package of licenses. Calls are coming in and getting transferred back through the SBC. Each call consists of two sessions, so the maximum number of simultaneous active calls is 2,500.

**Figure 2:** Call with two sessions



### Note

For multiple transfers, each new GCID and SIP REFER is considered a session.

## Border

Typically, these sessions will traverse one or more IP networks, whether on an enterprise network or multiple service provider networks. The SBC sits at the **border** of each network in order to control the amount and type of sessions, as well as the type of data that can be used during these sessions. In this sense the SBC is part firewall, protecting the network from malicious IP traffic, and part traffic cop, policing how much traffic can enter the network in order to prevent overloads.

## Controller

The SBC is a **controller**, which means it controls not only whether traffic can enter the network, but where it should be sent (referred to as session routing) and what type of modifications should be made to the traffic (example, transforming a SIP message header into an H.323 message header or downgrading an HD voice call to a compatible voice codec).

## Sonus SBC Portfolio Components


The Sonus SBC Portfolio is comprised of the following Sonus Session Border Controller products:

## Sonus SBC Edge

- SBC 1000/2000

## Sonus SBC Core

- SBC 5000 series
- SBC 5400
- SBC 7000
- SBC Software Edition
- SBC SWe Cloud

 The focus of this documentation space is on the SBC Core platforms. To view SBC 1000/2000 product documentation, [click here](#).

The SBC Core addresses the next-generation needs of SIP communications by delivering embedded media transcoding, robust security and advanced call routing in a high-performance, small form-factor device enabling service providers and enterprises to quickly and securely enhance their network by implementing services like SIP trunking, secure Unified Communications and Voice over IP (VoIP).

The SBC Core provides a reliable, scalable platform for IP interconnect to deliver security, session control, bandwidth management, advanced media services and integrated billing/reporting tools in an SBC appliance. This versatile series of SBCs can be deployed as peering SBCs, access SBCs or enterprise-SBCs (e-SBCs). The SBC product family is tested for interoperability and performance against a variety of third party products and call flow configurations in the customer networks.

The SBC Core can be further expanded to:

- **SBC 5000 Series**
  - **SBC 5100/5110 Platforms**

Targets small to medium session count deployments (250 to 10,000). These capacities make this product particularly well suited for medium enterprises and small to medium service providers.
  - **SBC 5200/5210 Platforms**

Targets medium to large session count deployments (500 to 64,000). These capacities make this product particularly well suited for large enterprises and medium to large service providers.
- **SBC 5400**



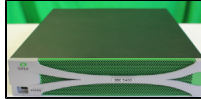


Targets medium to large session count deployments (700 to 75,000). These capacities make this product particularly well suited for large enterprises and medium to large service providers.
- **SBC 7000 Series**

Targets large session count deployments (up to 150,000 sessions). These capacities make this product particularly well suited for large service providers. Example deployment scenarios include:

  - Service Provider Access – High subscriber and simultaneous call scale coupled with high availability and redundancy.
  - Service Provider Peering – High simultaneous call scale coupled with high availability and redundancy.
  - Enterprise and Service Provider Video – Supports large WAN interface bandwidth.
  - Wireless – Supports a large number of subscribers and calls where high availability is essential.
- **SBC Software Edition (SBC SWe)**

Targets small to large session count deployments (25 to unlimited). These capacities make this product particularly well suited for small to large enterprises and service providers. SBC SWe application resides on a private or public virtualized cloud, or on a dedicated server.

**Table 1: SBC Platform Comparison**

✔ = supported	Medium Enterprises / Small to Medium Service Providers	Large Enterprises / Medium to Large Service Providers			Scalable SBC
Platform	51x0 	52x0 	5400 	SBC 7000 	SBC SWe / SWe on Cloud 
Maximum number of non-transcoded sessions	10,000	64,000	75,000	150,000	(See SBC SWe Performance Metrics)
Call handling capacity	250 - 10,000 sessions	450 - 64,000 sessions	700 - 75,000 sessions	up to 150,000 sessions	25-unlimited
Full SBC Feature Set	✔	✔	✔	✔	(Refer to SBC Core Key Features)
User Interface	Embedded EMA or external EMS	Embedded EMA or external EMS	Embedded EMA or external EMS	Embedded EMA or external EMS	Embedded EMA or external EMS
DSP Expansion Module Types	<ul style="list-style-type: none"> <li>• 5100: SPS100 / SPS100DB (FRU)</li> <li>• 5110: DSP20 / DSP25 (CRU)</li> </ul>	<ul style="list-style-type: none"> <li>• 5200: SPS100 / SPS100DB (FRU)</li> <li>• 5210: DSP20 / DSP25 (CRU)</li> </ul>	DSP20 / DSP25 (CRU)	DSP-LC (CRU)	N/A

The following table lists the number of ports and storage capacities of the various SBC Core platforms.

**Table 2: Ports and Storage Capacities**

Type	SBC 5100	SBC 5110	SBC 5200	SBC 5210	SBC 5400	SBC 7000	SBC SWe
Number of Management ports	2	2	2	2	4	2	1
Number of High Availability (HA) ports	2	2	2	2	2	2	1
Number of Media ports	2	2	4	4	1x10Gb or 4x1Gb	4	2
Flash Drive capacity	80 GB	128 GB	256 GB	256 GB	Min. 480 GB	Min. 800 GB	(See <a href="#">Hardware and Software Requirements</a> )
RAM capacity	12 GB	24 GB	24 GB	24 GB	32 GB	128 GB	(See <a href="#">Hardware and Software Requirements</a> )

